IN THE ABSTRACT

Please addend the Abstract submitted herewith on a separate sheet.

IMPROVED METHOD AND APPARATUS FOR TRACKING A RESONANT FREQUENCY

ABSTRACT

An arrangement for tracking resonant frequency of electrically resonant structures through a single channel includes a variable frequency oscillator associated with each resonant structure which provides an excitation signal of a variable frequency encompassing a possible resonant frequency of the associated resonant structure. Coupling device(s) are provided which connect each variable frequency oscillator to said resonant structure(s). An I-mixer is provided for each oscillator which forms a synchronous detector, a first input of each I-mixer being connected to its associated oscillator and a second input being connected to the coupling device, each I-mixer mixing the excitation signal from the associated variable frequency oscillator with a response signal generated by the resonant structure(s) in response to each excitation signal. The output of each I-mixer is filtered to remove sum products of the excitation and response signals, thereby leaving an amplitude modulation component of the signal, which is processed in a control loop to track the resonant frequency of each resonant structure.